

APR 30 1981

**MATERIAL SAFETY DATA SHEET**

(Approved by U.S. Department of Labor "Essentially Similar" to Form LSB-OOS-4)

JAN 14 1982



CHEMICAL NAME: UCON® REFRIGERANT 12

SYNONYMS: --

CHEMICAL FAMILY: UCON Refrigerants

FORMULA: CCl<sub>2</sub>F<sub>2</sub>

MOLECULAR WEIGHT: 120.9

TRADE NAME AND SYNONYMS: UCON Refrigerant 12

**I. PHYSICAL DATA**

BOILING POINT, 760 mm. Hg	-29.8°C. (-21.6°F.)	FREEZING POINT	-157.7°C. (-252°F.)
SPECIFIC GRAVITY (H <sub>2</sub> O = 1)	1.33 at 21°C.	VAPOR PRESSURE AT 20°C.	82.3 psia.
VAPOR DENSITY (air = 1)	4.2	SOLUBILITY IN WATER, % by wt.	<0.01
PER CENT VOLATILES BY VOLUME	100	EVAPORATION RATE (Butyl Acetate = 1), 20°C.	380
APPEARANCE AND ODOR	Gas; characteristic odor.		

**II. HAZARDOUS INGREDIENTS**

MATERIAL	%	TLV (Units)
Not applicable		

**III. FIRE AND EXPLOSION HAZARD DATA**

FLASH POINT (test method)	None		AUTOIGNITION TEMPERATURE	None		
FLAMMABLE LIMITS IN AIR, % by volume			LOWER	Nonflammable	UPPER	Nonflammable
EXTINGUISHING MEDIA	Not applicable					
SPECIAL FIRE FIGHTING PROCEDURES	None					
UNUSUAL FIRE AND EXPLOSION HAZARDS	None					

**EMERGENCY PHONE NUMBERS**

Dr. C. U. Dernehl, 212/551-4785; 914/946-0646 (night)  
Dr. K. S. Lane, 212/551-4787; 914/666-3656 (night)  
C. P. Carpenter, Ph.D., 412/327-1020; 412/241-7896 (night)

Legal responsibility is assumed only for the fact that all studies reported here and all opinions are those of qualified experts.

#### IV. HEALTH HAZARD DATA

THRESHOLD LIMIT VALUE	1,000 ppm.
EFFECTS OF OVEREXPOSURE	Contact with liquid will freeze tissues. Breathing concentrations in excess of 10 per cent in air will cause dizziness. An asphyxiate.
EMERGENCY AND FIRST AID PROCEDURES	Flush frosted skin with warm water and get medical care. If inhaled in high concentrations, move to fresh air.

#### V. REACTIVITY DATA

STABILITY		CONDITIONS TO AVOID	None
UNSTABLE	STABLE		
--	✓		
INCOMPATIBILITY (materials to avoid)	None		
HAZARDOUS DECOMPOSITION PRODUCTS	Thermal decomposition may produce hydrogen chloride, hydrogen fluoride, carbon monoxide, and/or carbon dioxide.		
HAZARDOUS POLYMERIZATION		CONDITIONS TO AVOID	None
May Occur	Will not Occur		
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#### VI. SPILL OR LEAK PROCEDURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED	Allow to evaporate.
WASTE DISPOSAL METHOD	Mix in small proportion with combustible liquid and incinerate.

#### VII. SPECIAL PROTECTION INFORMATION

RESPIRATORY PROTECTION (specify type)		Fresh-air mask for high concentrations	
VENTILATION	LOCAL EXHAUST	Preferred	SPECIAL ---
	MECHANICAL (general)	Acceptable	OTHER ---
PROTECTIVE GLOVES	---	EYE PROTECTION	Safety glasses
OTHER PROTECTIVE EQUIPMENT	Eye bath and safety shower		

#### VIII. SPECIAL PRECAUTIONS

PRECAUTIONARY LABELING	UCON® REFRIGERANT 12 CAUTION! LIQUID AND GAS UNDER PRESSURE. Keep away from heat or open flame. Do not drop or refill. Nonflammable liquified gas. FOR INDUSTRY USE ONLY
OTHER HANDLING AND STORAGE CONDITIONS	---